



Media Sub

Single 5.25" Powered Multimedia Subwoofer

TECHNICAL MANUAL



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H A Harman International Company

Rev B 4/02

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FEATURES

- Powered subwoofer system.
- Built-in electronic equalization for proper frequency balance with satellite speakers.
- 25 watt amplifier.
- Line level stereo output for use with satellite speakers that don't have a subwoofer output.
- Auto turn-on / turn-off circuitry.
- Subwoofer is magnetically shielded for flicker-free use near computer monitors.

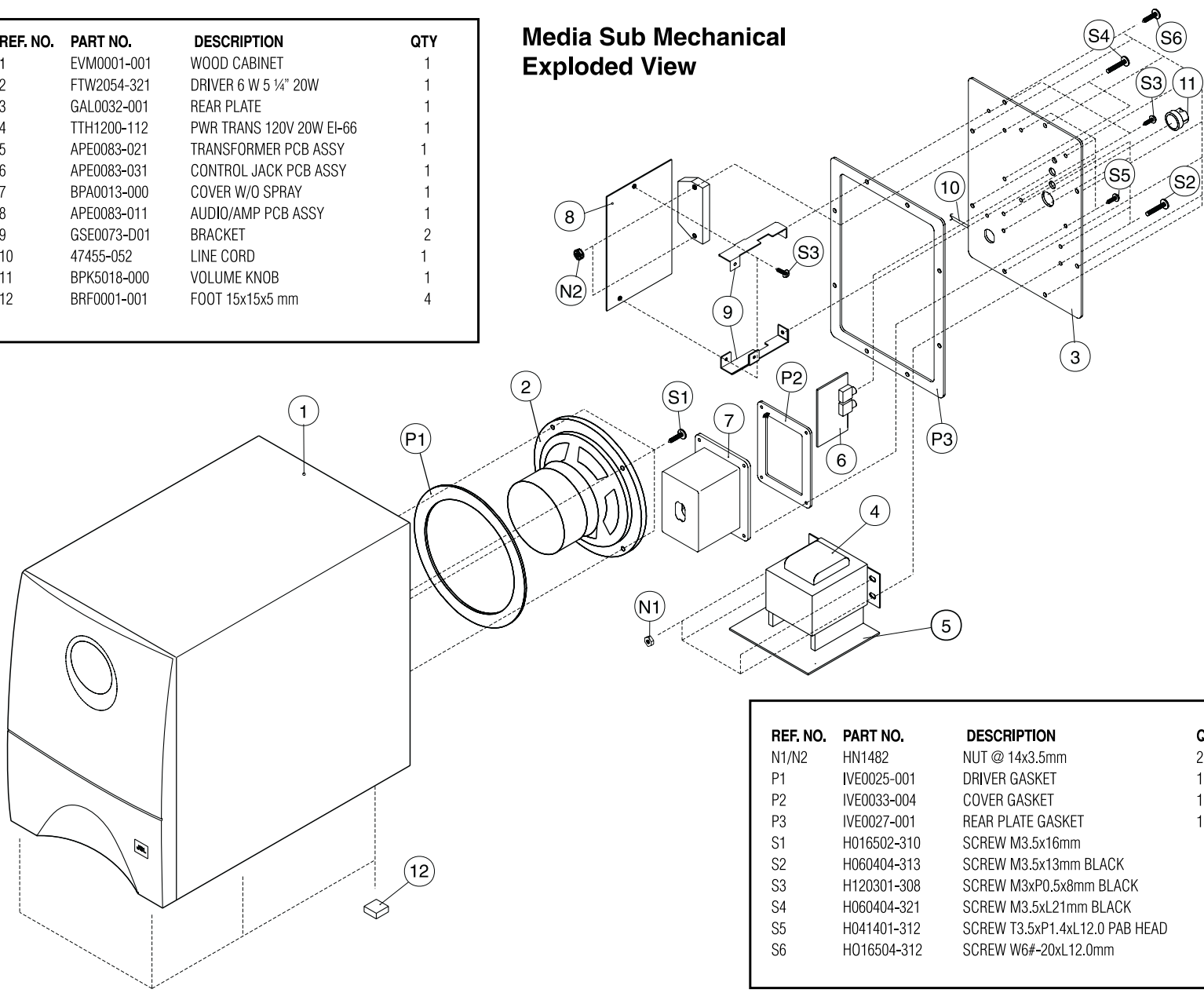
SPECIFICATIONS

Speaker System	Sixth band-pass enclosure
Speaker Size	5.25" woofer
Total Amplifier Output Power	25W at 10% THD
Input Sensitivity	250mV input for full power
Frequency Response	40Hz - 150Hz
Input Impedance	10k ohms
Signal Output jack	Stereo miniplug jack (1/8")
Signal Input Jacks	Stereo miniplug jack (1/8")
External Dimensions	
Height	10.25"
Width	7.35"
Depth	12"
Weight	12.8 lbs.
External Dimensions (metric)	
Height	260mm
Width	186mm
Depth	305mm
Weight	5.8 kgs

MEDIA SUB EXPLODED VIEW

REF. NO.	PART NO.	DESCRIPTION	QTY
1	EVM0001-001	WOOD CABINET	1
2	FTW2054-321	DRIVER 6 W 5 1/4" 20W	1
3	GAL0032-001	REAR PLATE	1
4	TTH1200-112	PWR TRANS 120V 20W EI-66	1
5	APE0083-021	TRANSFORMER PCB ASSY	1
6	APE0083-031	CONTROL JACK PCB ASSY	1
7	BPA0013-000	COVER W/O SPRAY	1
8	APE0083-011	AUDIO/AMP PCB ASSY	1
9	GSE0073-D01	BRACKET	2
10	47455-052	LINE CORD	1
11	BPK5018-000	VOLUME KNOB	1
12	BRF0001-001	FOOT 15x15x5 mm	4

Media Sub Mechanical Exploded View



REF. NO.	PART NO.	DESCRIPTION	QTY
N1/N2	HN1482	NUT @ 14x3.5mm	2
P1	IVE0025-001	DRIVER GASKET	1
P2	IVE0033-004	COVER GASKET	1
P3	IVE0027-001	REAR PLATE GASKET	1
S1	H016502-310	SCREW M3.5x16mm	
S2	H060404-313	SCREW M3.5x13mm BLACK	
S3	H120301-308	SCREW M3xP0.5x8mm BLACK	
S4	H060404-321	SCREW M3.5xL21mm BLACK	
S5	H041401-312	SCREW T3.5xP1.4xL12.0 PAB HEAD	
S6	H016504-312	SCREW W6#-20xL12.0mm	

DISASSEMBLY PROCEDURES

Step 1

Remove the 8 purchase screws (S6) from the rear plate to separate the rear plate and the wood cabinet.

Step 2

Unplug the connector speaker wire from the PCB amp assembly.

Step 3

Remove the 4 purchase screws (S5) from the rear plate to separate the rear plate and cover.

Step 4

Remove the power/volume knob from the rear plate.

Step 5

Remove the 4 purchase screws (S2) and nuts (N1) to separate the rear plate and transformer assembly.

Step 6

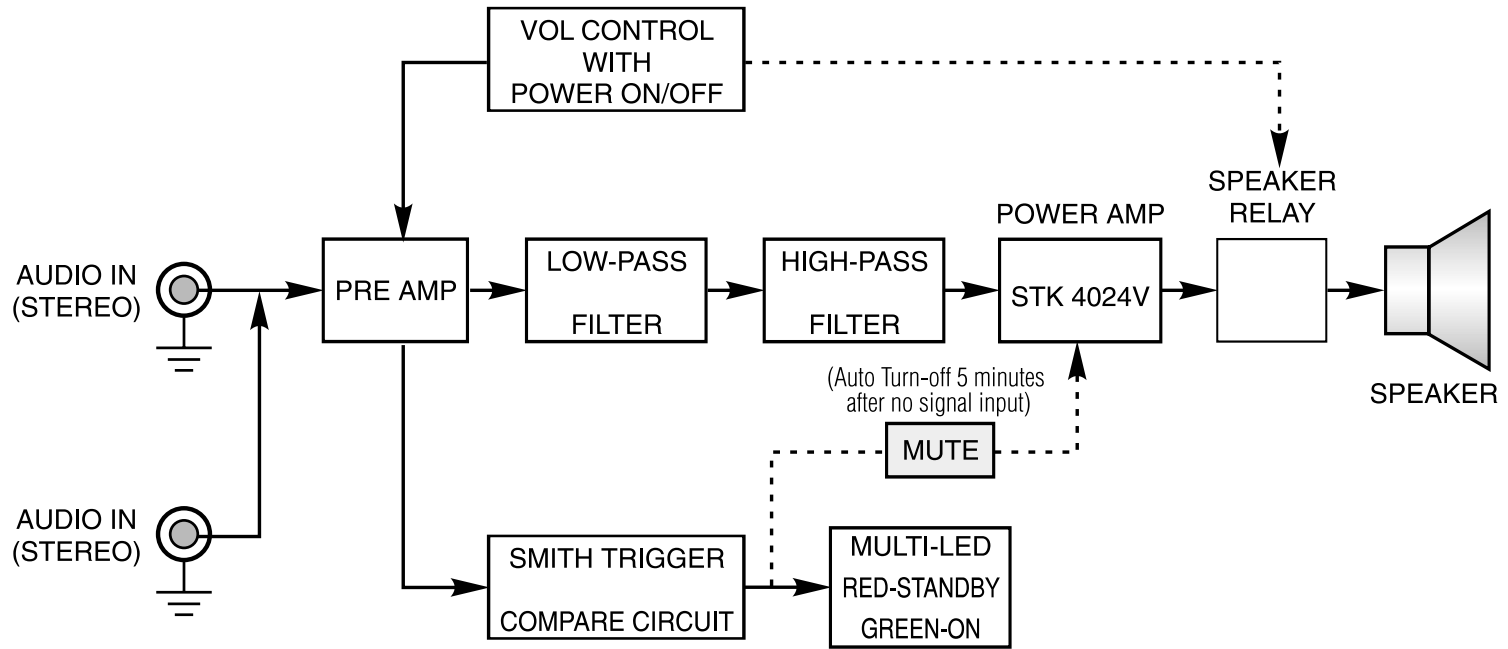
Remove the 2 purchase screws (S3) from the bracket and the 2 purchase screws (S4) and nuts (N2) from the IC of STK4024 to separate the rear plate and Amp assembly.

Step 7

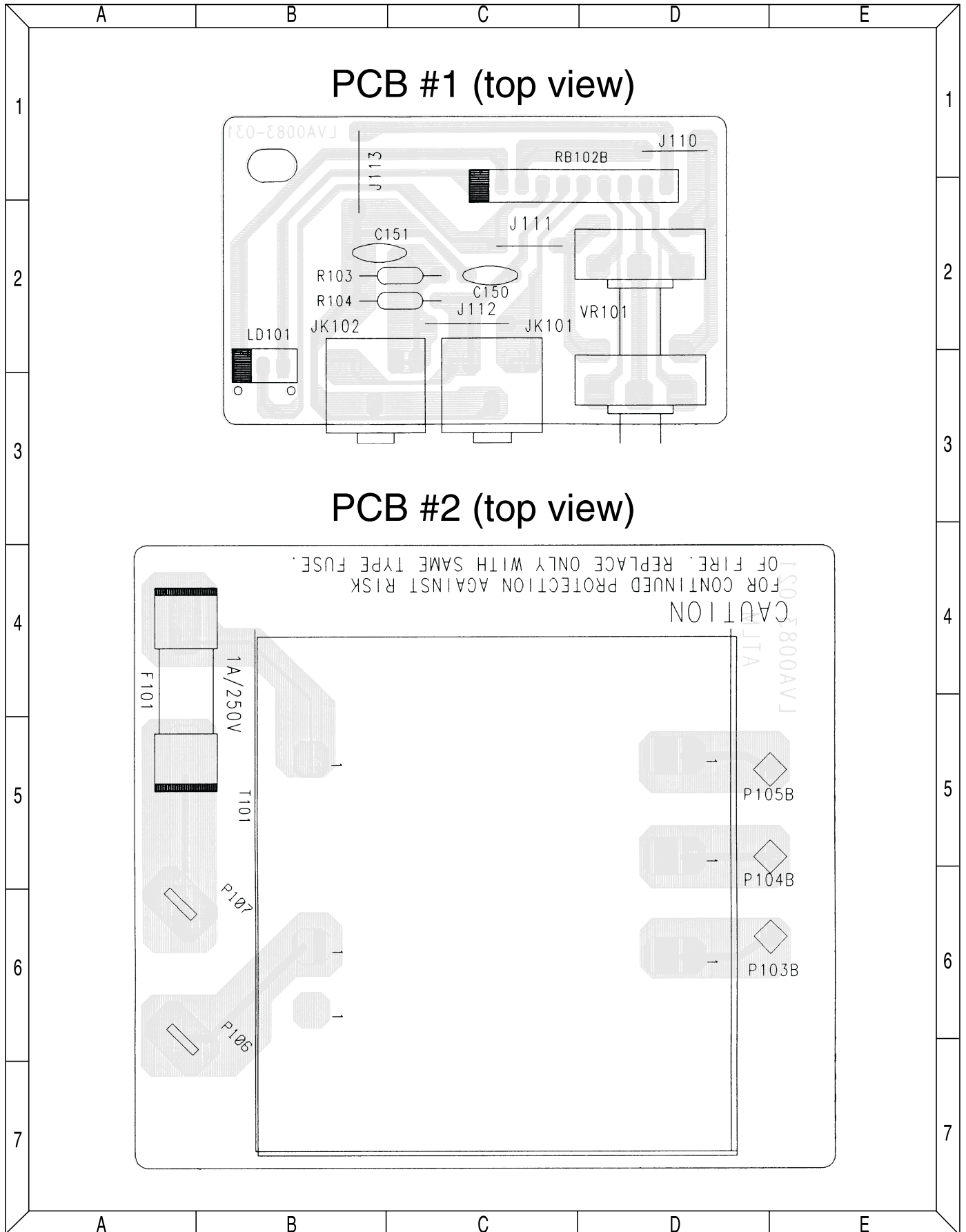
Remove the 4 purchase screws (S1) from the driver inside the wood cabinet to separate the wood cabinet and the driver.

BLOCK DIAGRAM

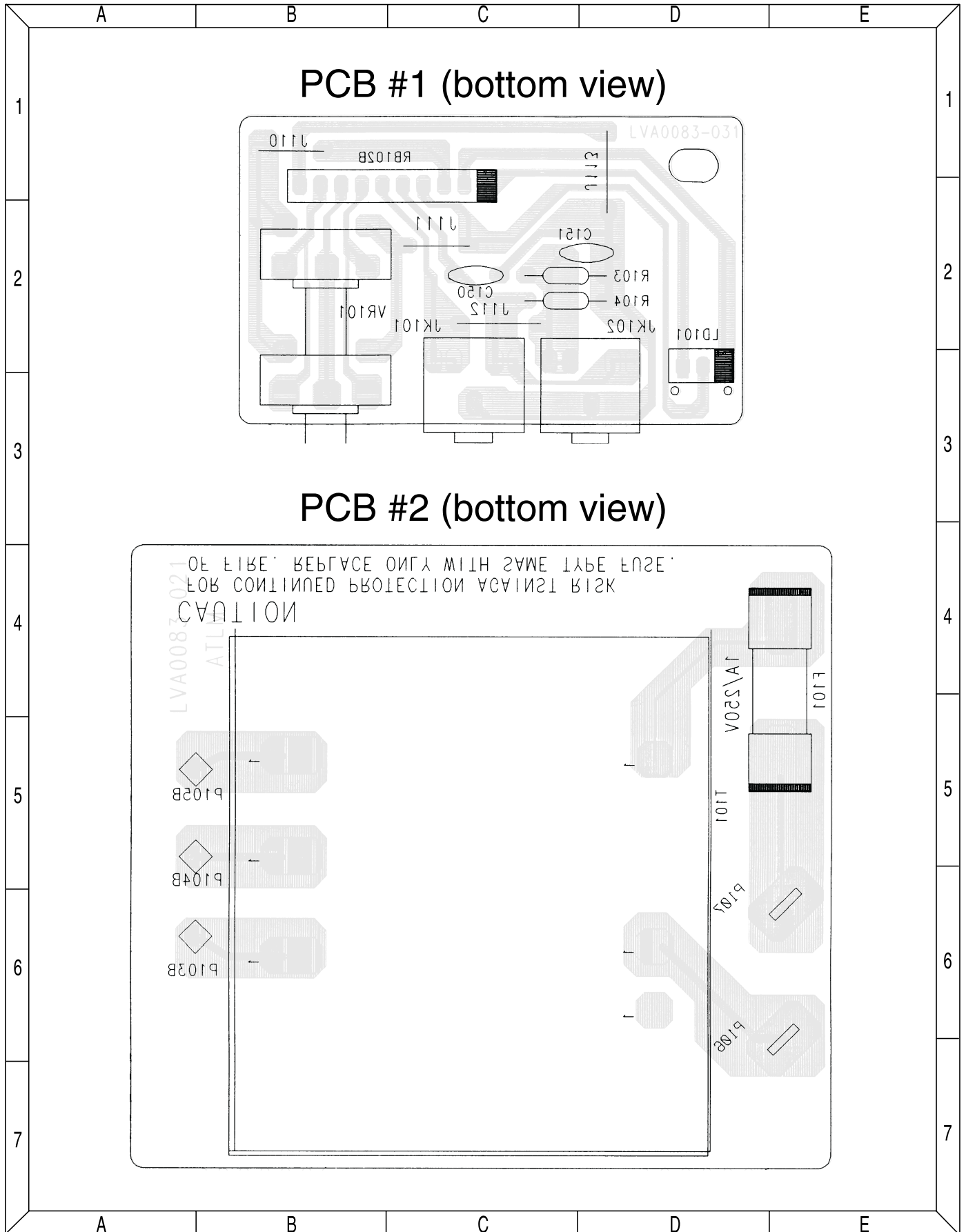
Media Sub Block Diagram



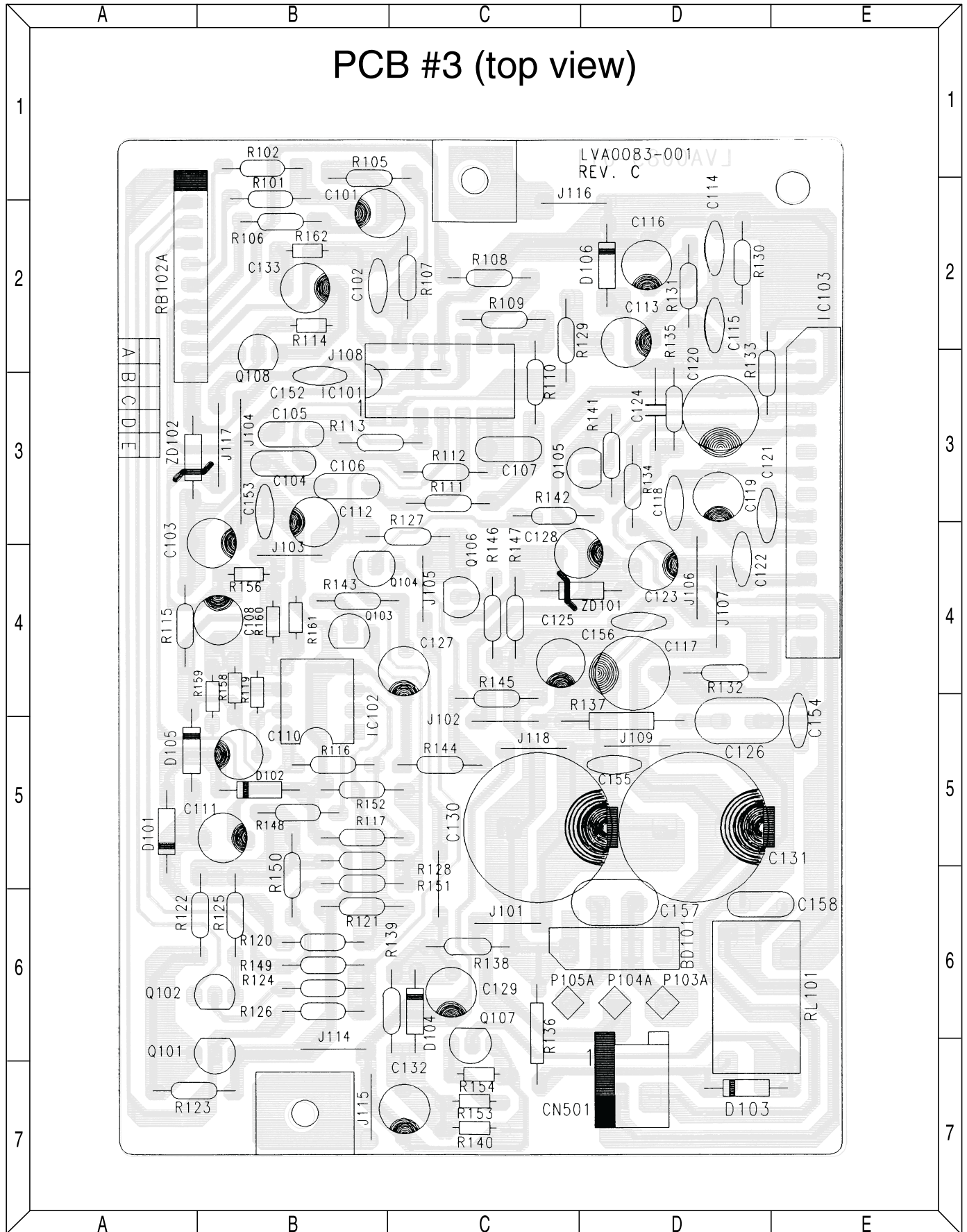
PRINTED CIRCUIT BOARDS 1 & 2 (viewing trace layer through the board)



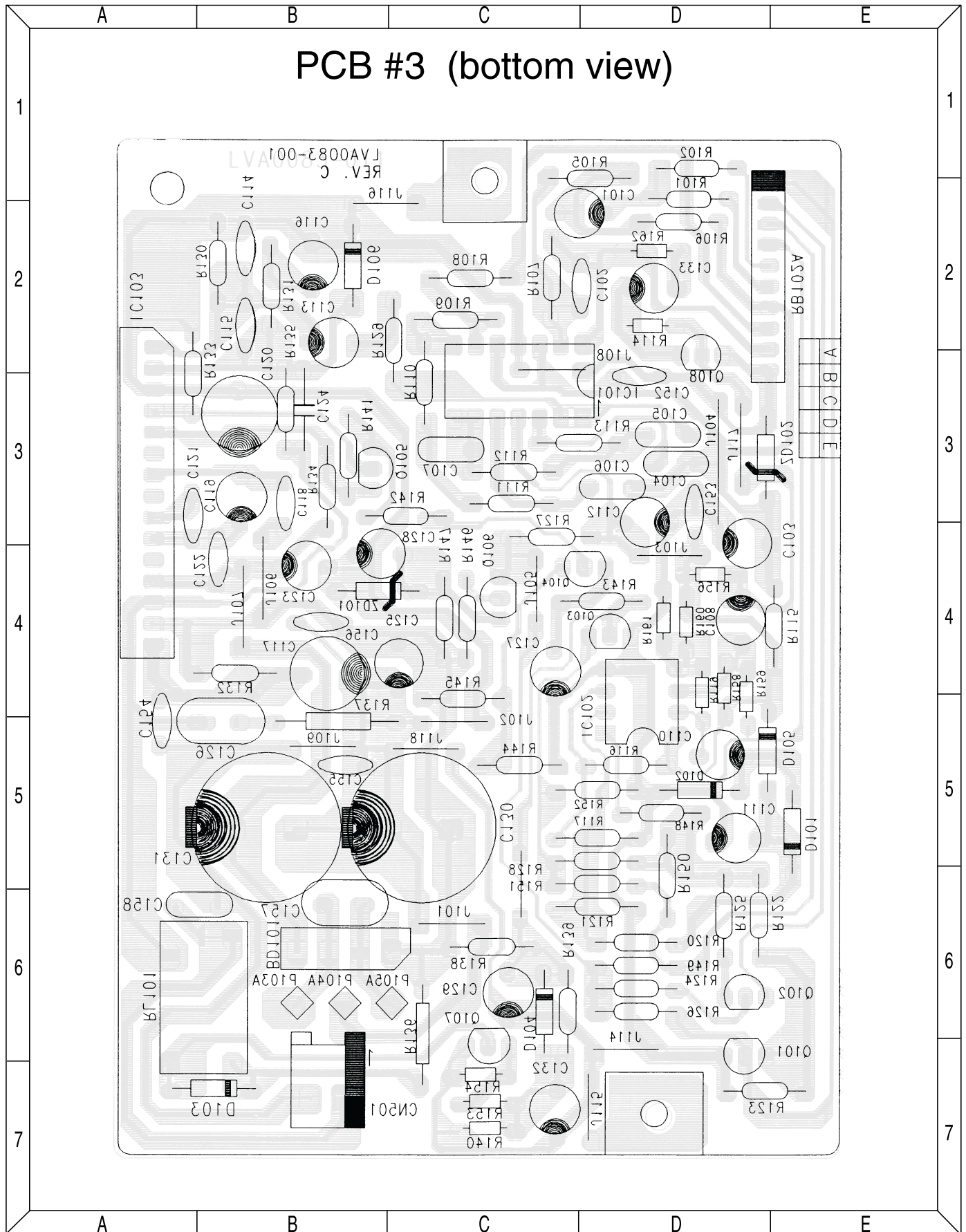
PRINTED CIRCUIT BOARDS 1 & 2 (viewing silk-screen through the board)



PRINTED CIRCUIT BOARD 3 (viewing trace layer through the board)



PRINTED CIRCUIT BOARD 3 (viewing silk-screen through the board)



MEDIA SUB ELECTRICAL PARTS LIST

Part Number	Description	Qty	Reference Designator
<i>Resistors</i>			
QAF0250-331	RESISTOR 330 OHM 1/2W 5% CF	1	R136
QAF0250-479	RESISTOR 4.7 OHM 1/2W 5% CF	1	R137
QAF0450-100	RESISTOR 10 OHM 1/4W 5% CF	1	R146
QAF0450-101	RESISTOR 100 OHM 1/4W 5% CF	2	R132 R134
QAF0650-102	RESISTOR 10K OHM 1/6W 5% CF	2	R115 R124
QAF0650-103	RESISTOR 10K OHM 1/6W 5% CF	17	R101 R102 R105 R106 R108 R109 R122 R123 R125 R128 R133 R138 R139 R140 R153 R160 R161
QAF0650-104	RESISTOR 100K OHM 1/6W 5% CF	1	R117
QAF0650-105	RESISTOR 1.0M OHM 1/6W 5% CF	1	R114
QAF0650-152	RESISTOR 1.5K OHM 1/6W 5% CF	3	R126 R147 R149
QAF0650-183	RESISTOR 18K OHM 1/6W 5% CF	4	R110 R111 R112 R113
QAF0650-223	RESISTOR 22K OHM 1/6W 5% CF	2	R151 R162
QAF0650-224	RESISTOR 220K OHM 1/6W 5% CF	1	R120
QAF0650-304	RESISTOR 300K OHM 1/6W 5% CF	1	R158
QAF0650-330	RESISTOR 33 OHM 1/6W 5% CF	1	R127
QAF0650-332	RESISTOR 3.3K OHM 1/6W 5% CF	1	R148
QAF0650-334	RESISTOR 330K OHM 1/6W 5% CF	2	R119 R159
QAF0650-392	RESISTOR 3.9K OHM 1/6W 5% CF	1	R154
QAF0650-393	RESISTOR 39K OHM 1/6W 5% CF	1	R107
QAF0650-394	RESISTOR 390K OHM 1/6W 5% CF	1	R116
QAF0650-472	RESISTOR 4.7K OHM 1/6W 5% CF	1	R156
QAF0650-562	RESISTOR 5.6K OHM 1/6W 5% CF	2	R129 R150
QAF0650-563	RESISTOR 56K OHM 1/6W 5% CF	2	R130 R135
QAF0650-682	RESISTOR 6.8K OHM 1/6W 5% CF	1	R152
QAF0650-821	RESISTOR 820 OHM 1/6W 5% CF	1	R131
QAF0650-824	RESISTOR 820K OHM 1/6W 5% CF	1	R121
QAF0650-103	RESISTOR 10K OHM 1/6W 5% CF	2	R103 R104
<i>Capacitors</i>			
PRD1335-220	COND DISC 22 pF 50V 5%	1	C124
PRD3545-101	COND DISC 100 pF 50V 10% Y5P	3	C102 C118 C122
PRD3545-102	COND DISC 1000 pF 50V 10% Y5P	1	C121
PRD3545-104	COND DISC 0.1 uF 50V 10% Y5P	2	C155 C156
PRD3545-331	COND DISC 330 pF 50V 10% Y5P	1	C115
PRD3545-471	COND DISC 470 pF 50V 10% Y5P	1	C114
PRD4965-203	COND DISC 0.02 uF 50V +80-20%	3	C152 C153 C154
PRE3951-101	COND ELECT 100 uF 10V 20% 85°C	2	C103 C116
PRE3951-221	COND ELECT 220 uF 10V 20% 85°C	1	C111
PRE3952-100	COND ELECT 10 uF 16V 20% 85°C	1	C110
PRE3952-101	COND ELECT 100 uF 16V 20% 85°C	2	C112 C128
PRE3952-221	COND ELECT 220 uF 16V 20% 85°C	1	C132
PRE3954-100	COND ELECT 10 uF 35V 20% 85°C	2	C123 C129
PRE3954-221	COND ELECT 220 uF 35V 20% 85°C	2	C117 C120
PRE3955-109	COND ELECT 1 uF 50V 20% 85°C	3	C113 C119 C133
PRE3955-478	COND ELECT 0.47 uF 50V 20% 85°C	1	C108
PRE3955-479	COND ELECT 4.7 uF 50V 20% 85°C	1	C101
PRM3737-104	COND MYLAR 0.1 uF 100V 5%	1	C157
PRM3737-152	COND MYLAR 0.0015uF 100V 5%	1	C158

Part Number	Description	Qty	Reference Designator
PRM3737-273	COND MYLAR 0.027 uF 100V 5%	4	C104 C105 C106 C107
PRM3747-104	COND MYLAR 0.1 uF 100V 10%	1	C126
PRD3545-101	COND DISC 100 pF 50V 10% Y5P	2	C150 C151
PVE3954-332	COND ELECT 3300 uF 35V 20%	2	C130 C131

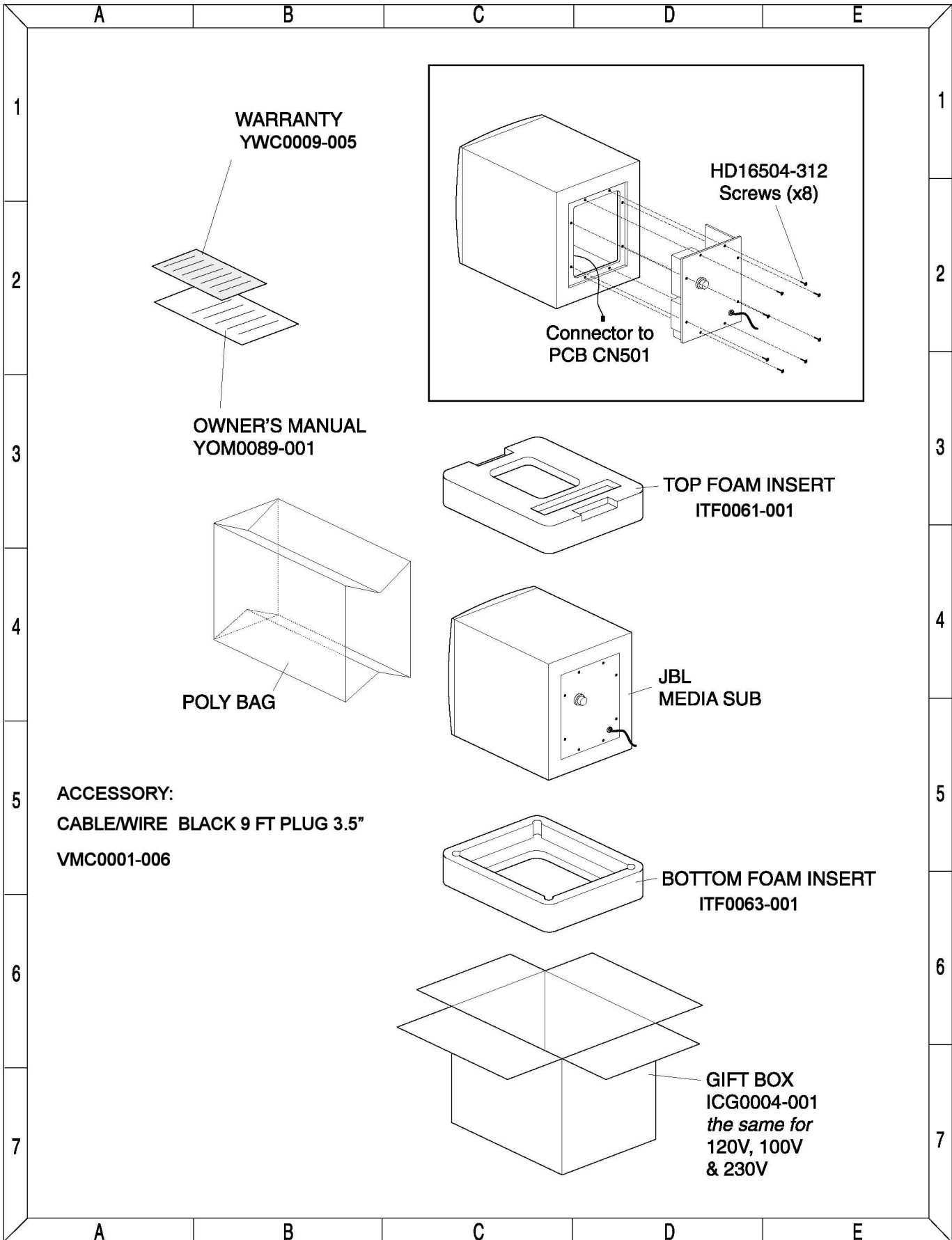
Semiconductors

RAD4001-001	RECTIFIER 1N4001 1A 35VRMS	1	D103
RAD4148-001	DIODE SW 1N4148	3	D101 D102 D104
RAZ0859-070	DIODE ZENR 5.6-5.9V 0.5W HITACHI HZ6B-2	1	ZD102
RAZ0859-081	DIODE ZENR 11.9-12.4V 0.5W HITACHI HZ12A-2	1	ZD101
RAN0945-001	XISTR NPN 2SC945P NEC	6	Q101 Q102 Q103 Q106 Q107 Q108
RHD0202-001	RECTIFIER BRIDGE RS202L	1	BD101
RHI0740-001	IC 14 PIN TL074CN SGS QUAD OP-AMP	1	IC101
RHI4032-001	IC 15 PIN STK4032II SANYO 40W POWER AMP	1	IC103
RHI4558-001	IC 8 PIN JRC4558D JRC DUAL OP-AMP	1	IC102

Miscellaneous/Mechanical

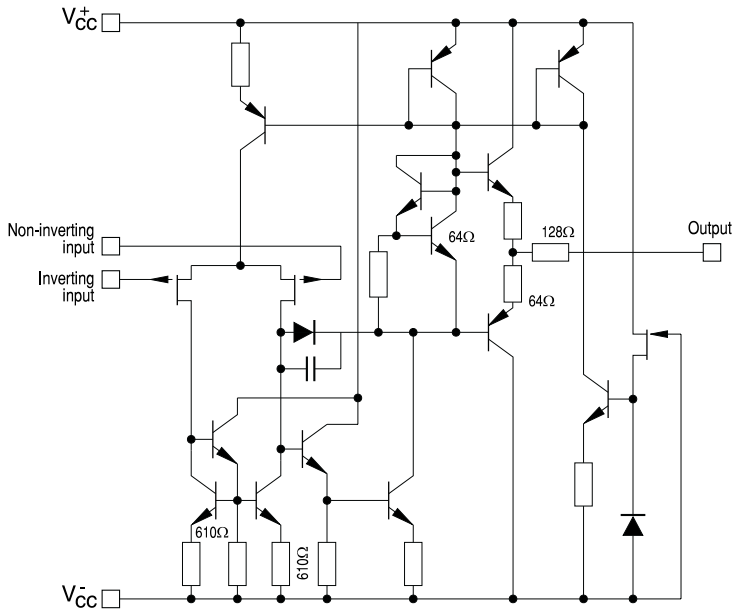
APE0083-A33	CNTL SW AY CNTL JACK PCB ASSY		
CCN1500-035	CONNECTOR B10B-XH-A 10 PIN PST BSE TOP P=2.5		RB102A
CCN3962-002	CONNECTOR 2 PIN CL3962WVO PST BSE TOP P=3.96		CN501
MRL2212-003	RELAY OJE-SS-112DM 12V DC 37.5 mA		RL101
CFC2557-001	FUSE CLIP DIA5xL20mm FUSE		F101
20565-120BB	WIRE 22 GA 120 mm BLACK 4-4 UL 1007		P104A TO P104B
20565-122BB	WIRE 22 GA 120 mm RED 4-4 UL 1007		P103A TO P103B, P105A TO P105B
XHP0001-001	L PIN		P106 P107
APE0083-B33	CNTL SW AY CNTL JACK PCB ASSY		
CJM9380-028	PHONE JACK D3.5 JY3542-01-030		JK101 JK102
DSS0545-003	HOUSING LED HOUSING LEK2-4.5 5 DIA H=4.5 mm		LD001
KEM0001-001	LED 5 DIA RED/GREEN		LD001
MRR0103-001	CNTL ROTRY 10K OHM B SIGNAL WITH SWITCH ON/OFF		
5003A2501B0	COND WIRE 10 COND 250 mm		RB102B TO RB102A
APE0083-C22	X'FORM PCB X'FORM PCB ASSY 100V E035-1X (HI)		
APE0083-C33	CNTL SW AY CNTL JACK PCB ASSY		
GSE0073-001	BRACKET PCB BRACKET		PCB-BRACKET
H120301-308	SCREW T3.0x0.5pxL8.0 mm PAN HEAD BLACK		PCB TO BRACKET
BPA0013-000	COVER		
BPK5027-000	VOL. KNOB E-035 (JBL)		
DBU0002-001	BUSHING AC LINE BUSHING PIN GOOD 4RF-5		AC CORD BUSHING
GAL0032-001	REAR PLATE AC 120V~60Hz		
H021401-312	SCREW M3.5xP1.4xL12 mm PAN HEAD BLACK		REAR TO COVER
H060404-310	SCREW M3.5xP0.6xL10 mm BLACK WAFER HEAD		REAR COVER TO TRANSFORMER-4
H060404-321	SCREW M3.5xP0.6xL21 mm BLACK WAFER HEAD		REAR TO IC-2
H120301-308	SCREW T3.0x0.5pxL8.0 mm PAN HEAD BLACK		REAR TO BRACKET
HNI1482	K-NUT #6-32 NICKEL WITH TOOTH WASHER		TRANSFORMER-6
IVE0025-001	SPONGE 85x65mm		COVER
IVE0027-001	SPONGE L185xW8xT2mm		COVER-1, BETWEEN REAR PLATE AND AC CORD-0.5
IVE0083-001	SPONGE L82xW37xT4mm		TRANSFORMER AREA
IVS0003-001	SPONGE L60xW10xT1mm		VOLUME PCB-1
IVS0004-002	FELT L20xW10xT0.9mm		VR PCB TO COVER SLOT-4
KSA2100-002	FUSE 1A 250V SLOW 5x20mm UL/CSA/T-MARK		F101
TTH1200-112	PWR TRANS EI-66 120V 20W		
47455-D52	LINE CORD SPT-2 1980mm POL BLK-UL DBLE INS		

PACKAGING EXPLODED VIEW

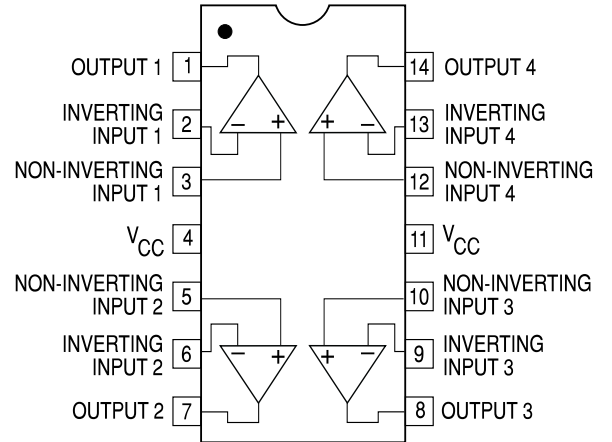


INTEGRATED CIRCUIT DIAGRAMS

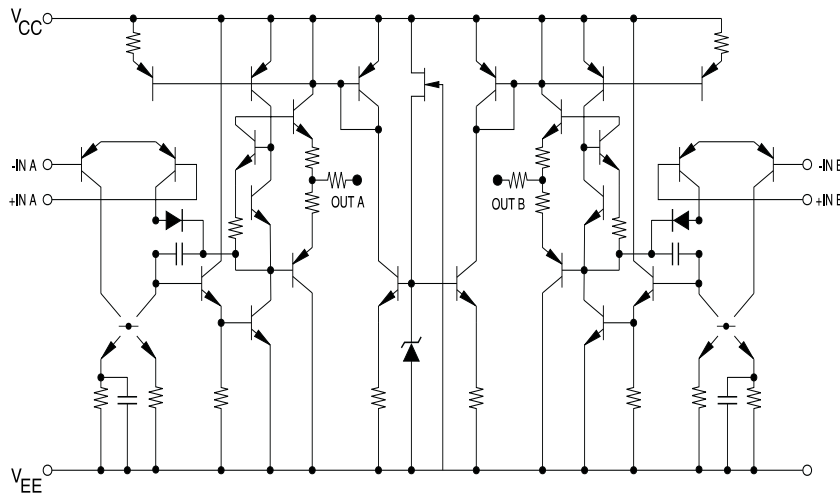
IC101 - TL074 Op Amp



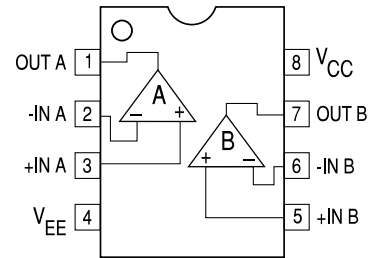
IC101 - TL074 Op Amp



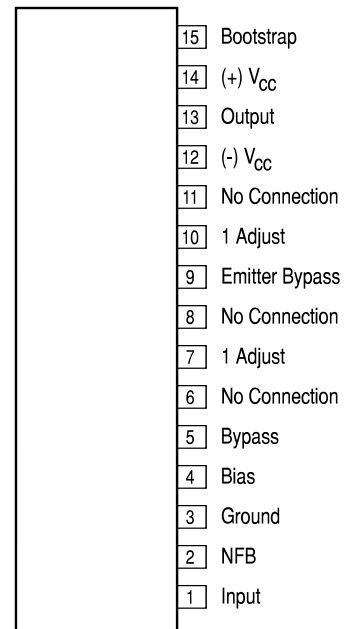
IC102 - 4558P Op Amp



IC102 - 4558P Op Amp

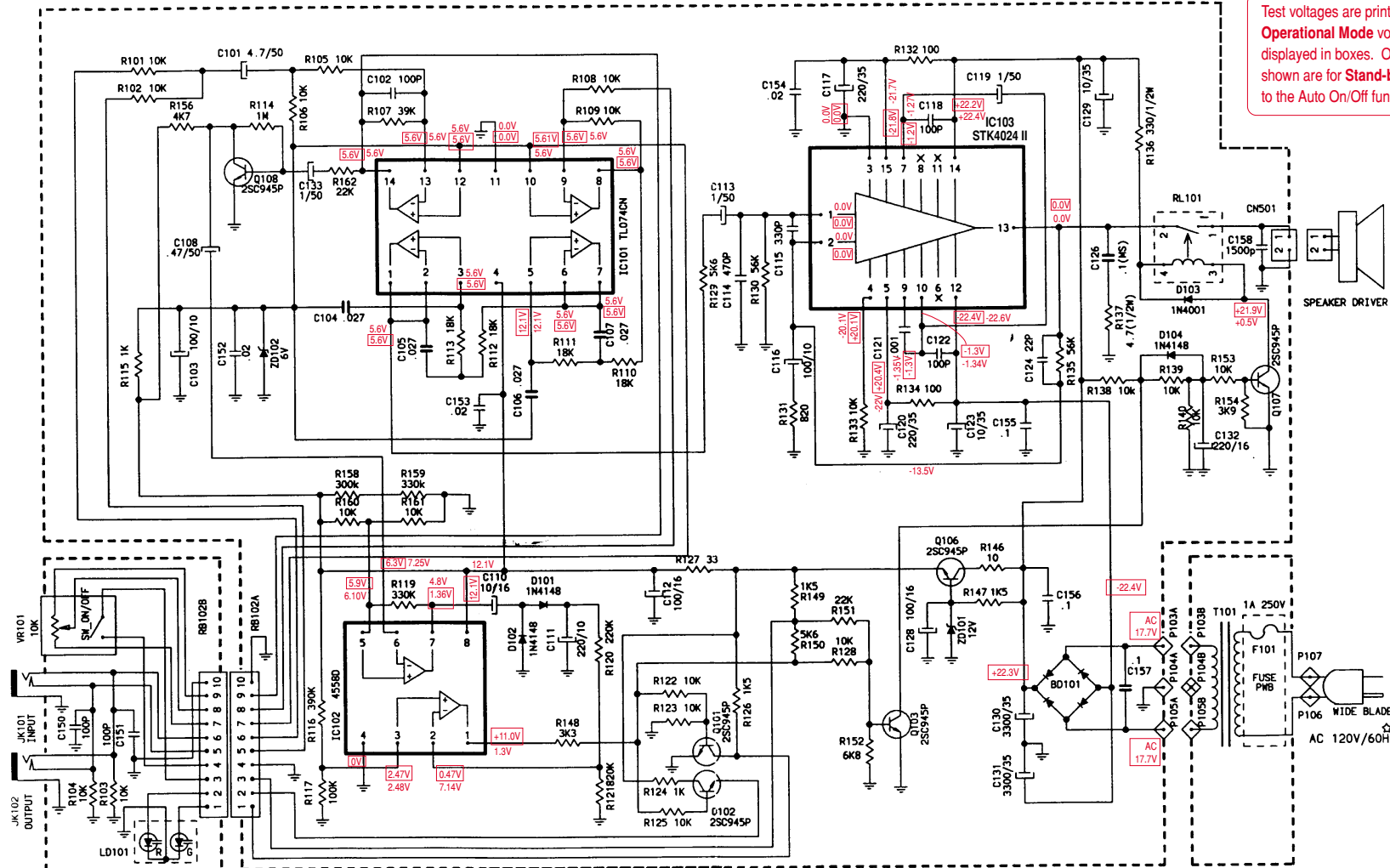


IC103 - STK4024 Power Amp

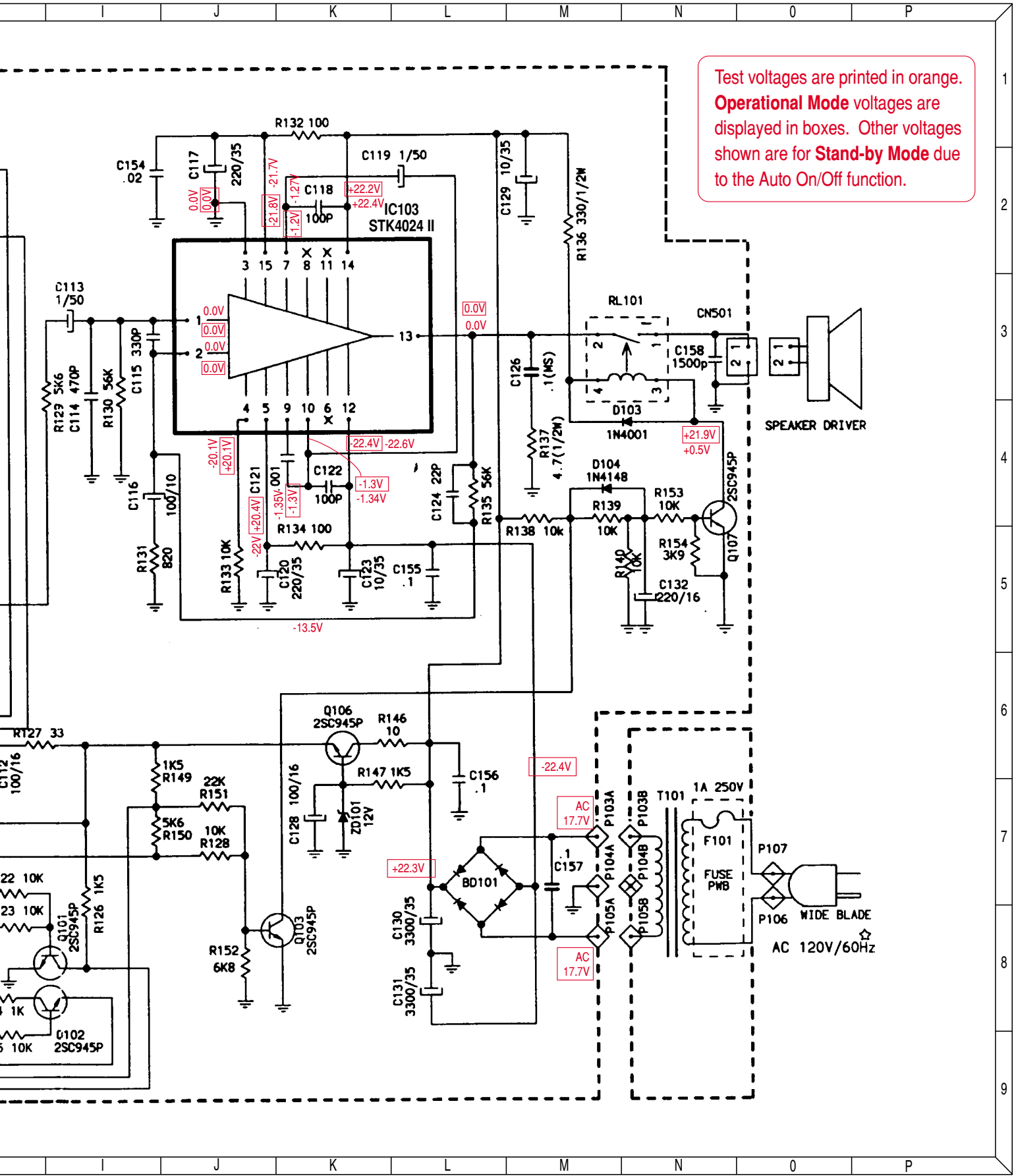


Media Sub Schematic Diagram

Test voltages are printed in orange. Operational Mode voltages are displayed in boxes. Other voltages shown are for Stand-by Mode due to the Auto On/Off function.



Schematic Diagram



Test voltages are printed in orange. Operational Mode voltages are displayed in boxes. Other voltages shown are for Stand-by Mode due to the Auto On/Off function.

